

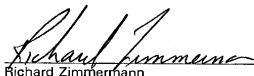
**SOLE INVENTOR**

"EXPRESS MAIL" mailing label No.

**EV 027096166US.**

Date of Deposit: **February 11, 2002**

I hereby certify that this paper (or fee) is being deposited with the United States Postal Service "EXPRESS MAIL POST OFFICE TO ADDRESSEE" service under 37 CFR §1.10 on the date indicated above and is addressed to: Commissioner for Patents, Washington, D.C. 20231



Richard Zimmermann

**APPLICATION FOR  
UNITED STATES LETTERS PATENT**

**S P E C I F I C A T I O N**

---

**TO ALL WHOM IT MAY CONCERN:**

Be it known that I, Nicole Beaulieu, a citizen of the United States of America, residing at 6695 Evans Creek Drive, Reno, NV, 89509 has invented a new and useful **AUTOMATED SELECTION OF VIDEO GAMING OPTIONS**, of which the following is a specification.

10073598.021102

# **AUTOMATED SELECTION OF VIDEO GAMING OPTIONS**

## Background

This patent is directed to a casino gaming apparatus, which could be either an individual gaming unit or a casino gaming system having a plurality of gaming units, that is capable of providing a player the choice between automated selection of a casino game option and carrying out the automated selection, or manual selection of the casino game option.

Gaming units, like many other casino games, involve a player making a selection from among multiple options. Other aspects of gaming units and casino games are also user-selectable, such as which game to play. A conventional gaming unit has been provided with a display unit capable of generating video images, a coin or bill acceptor, and a controller with a memory and a processor that controls the overall operation of the gaming unit. The controller was programmed to allow a person to make a wager, to cause video images to be generated on the display unit, to determine an outcome of the casino game, and to determine a value payout associated with the outcome of the casino game. The conventional gaming unit was programmed to display video images representing a casino game, which included a number of user-selectable casino games including video poker, video blackjack, video slots, video keno, video bingo or any of a number of casino games. In video Keno, a player is given the option of selecting one or more game numbers or allowing the controller to select the game numbers for the player. It is desirable to use a similar feature in other aspects of gaming units and other casino games.

In the game Keno the player initially selects and wagers on what number(s) the player believes will be drawn by a game operator, which may be the controller. The player receives a payout based on the how many matches there are between the selected numbers and the drawn numbers. While the player may select the Keno numbers, in certain Keno games the player may be given the option of allowing a controller to make the selection of Keno numbers. In those Keno games where the controller makes the selection, the controller was operatively coupled to two random number generators. The first random generator made random choices that were critical to the outcome of the

game, such as the selection of game numbers to be compared to the play numbers chosen by or selected on behalf of the player. The second random generator was used for less critical aspects of the game that were not related to the output of the game, such as selecting the play numbers for the player. The display of the Keno game included a video image of a plurality of numbers that were selected by the player prior to the start of the game. The display further included a button that could be actuated by the player, and which would allow the controller to randomly select the plurality of numbers on behalf of the player. The player then had the option of changing the play numbers chosen by the controller. Once the player was satisfied with the chosen numbers, the player could hit a "start" button for the game to proceed. Game numbers would then be randomly selected by the controller or a central computer coupled to the controller. The randomly selected numbers would be displayed as part of the video image. The player's play numbers would then be evaluated against the selected game numbers, and the player would be assigned a value based on the evaluation.

Thus the player has the choice of making the decision or letting the controller make the decision. International Game Technology (IGT) marketed a game platform under the trademark "Winner's Choice" beginning in late 1993. This game platform included a Keno game as described above. Beginning in 1996, IGT demonstrated a game platform under the trademark "Game King" which included the above-mentioned Keno game. Since 1997, IGT has also marketed a game platform under the trademark "iGame-Plus" which includes a game under the trademark "Neon Nights." "Neon Nights" includes a video Keno game under the trademark "Neon Keno" which also includes the above described features.

#### Summary of the Invention

In one aspect, the invention is directed to a gaming apparatus that may include a display unit capable of generating video images, a value input device, and a controller operatively coupled to the display unit and the value input device. The controller may comprise a processor and a memory, and may be programmed to allow a person to make a wager, to make an automated selection from among a plurality of user-selectable options presented to the person, to cause a video image representing a game to be

generated on the display unit, and to determine a value payout associated with an outcome of the game.

The video image may represent a game selected from the group of games consisting of video poker, video blackjack, video slots, and video bingo, in which case the video image may comprise an image of at least five playing cards if the game comprises video poker; the video image may comprise an image of a plurality of simulated slot machine reels if the game comprises video slots; the video image may comprise an image of a plurality of playing cards if the game comprises video blackjack; and the video image may comprise an image of a bingo grid if the game comprises video bingo.

The controller may further be programmed to allow the person a choice of making a selection from among said user-selectable options or to instruct the controller to make the automated selection. The controller may also be programmed to allow the person an opportunity to change the automated selection by a manual selection by the player and/or an automated selection by the controller. The controller may be programmed to cause a second video image to be generated, the second video image representing a secondary game which may present a plurality of user-selectable options. The automated selection may be a random selection. The automated selection may be dependent upon the parameters of the selected game. The user-selectable options may include the selection of one or more of the at least five playing cards to hold if the game comprises video poker; the user-selectable options may comprise whether to accept another card if the game comprises video blackjack; the user-selectable option may comprise a plurality of paylines if the game comprises video slots; and the user-selectable options may comprise a plurality of bingo grids if the game comprises video bingo. The user-selectable option may comprise the option of playing video poker, video blackjack, video slots or video bingo. The selection of a game from the group of games may be performed by the controller.

The invention is also directed to a gaming method that may comprise causing a video image to be generated, performing an automatic selection from among a plurality of user-selectable options, determining a value payout associated with an outcome of the game.

In another aspect, the invention is directed to a memory that may include a computer program that may be capable of being used in connection with a gaming apparatus. The memory may comprise a first memory portion physically configured in accordance with computer program instructions that may cause the gaming apparatus to allow a person to make a wager; a second memory portion physically configured in accordance with computer program instructions that may cause the gaming apparatus to cause a video image to be generated on a display unit; a third memory portion physically configured in accordance with computer program instructions that may cause the gaming apparatus to perform an automated selection from among a plurality of user-selectable options; and a fourth memory portion physically configured in accordance with computer program instructions that may cause the gaming apparatus to determine a value payout associated with an outcome of the game. The video image may represent a game selected from the group of games consisting of video poker, video blackjack, video slots, and video bingo, in which case the video image may comprise an image of at least five playing cards if the game comprises video poker; the video image may comprise an image of a plurality of simulated slot machine reels if the game comprises video slots; the video image may comprise an image of a plurality of playing cards if the game comprises video blackjack; and the video image may comprise an image of a bingo grid if the game comprises video bingo.

Additional aspects of the invention will be apparent to those of ordinary skill in the art in view of the detailed description of various embodiments, which is made with reference to the drawings, a brief description of which is provided below.

#### Brief Description of the Drawings

Fig. 1 is a block diagram of an embodiment of a gaming system in accordance with the invention;

Fig. 2 is a perspective view of an embodiment of one of the gaming units shown schematically in Fig. 1;

Fig. 2A illustrates an embodiment of a control panel for a gaming unit;

Fig. 3 is a block diagram of the electronic components of the gaming unit of Fig. 2;

Fig. 4 is a flowchart of an embodiment of a main routine that may be performed during operation of one or more of the gaming units;

Fig. 5 is a flowchart of an alternative embodiment of a main routine that may be performed during operation of one or more of the gaming units;

Fig. 6 is an illustration of an embodiment of a visual display that may be displayed during performance of the video poker routine of Fig. 8;

Fig. 7 is an illustration of an embodiment of a visual display that may be displayed during performance of the video blackjack routine of Fig. 9;

Fig. 8 is a flowchart of an embodiment of a video poker routine that may be performed by one or more of the gaming units;

Fig. 9 is a flowchart of an embodiment of a video blackjack routine that may be performed by one or more of the gaming units;

Fig. 10 is an illustration of an embodiment of a visual display that may be displayed during performance of the slots routine of Fig. 11;

Fig. 11 is a flowchart of an embodiment of a slots routine that may be performed by one or more of the gaming units;

Fig. 12 is an illustration of an embodiment of a visual display that may be displayed during performance of the video bingo routine of Fig. 13; and

Fig. 13 is a flowchart of an embodiment of a video bingo routine that may be performed by one or more of the gaming units;

Fig. 14 is a flowchart of an embodiment of a bonus game routine that may be performed by one or more of the gaming units;

Figs. 15-17 are illustrations of embodiments of visual displays that may be displayed during performance of the bonus game routine of Fig. 14; and

Fig. 18 is a flowchart of an embodiment of an automatic selection routine that may be performed by one or more of the gaming units.

#### Detailed Description of Various Embodiments

Although the following text sets forth a detailed description of numerous different embodiments of the invention, it should be understood that the legal scope of the invention is defined by the words of the claims set forth at the end of this patent. The

detailed description is to be construed as exemplary only and does not describe every possible embodiment of the invention since describing every possible embodiment would be impractical, if not impossible. Numerous alternative embodiments could be implemented, using either current technology or technology developed after the filing date of this patent, which would still fall within the scope of the claims defining the invention.

It should also be understood that, unless a term is expressly defined in this patent using the sentence "As used herein, the term '\_\_\_\_\_' is hereby defined to mean..." or a similar sentence, there is no intent to limit the meaning of that term, either expressly or by implication, beyond its plain or ordinary meaning, and such term should not be interpreted to be limited in scope based on any statement made in any section of this patent (other than the language of the claims). To the extent that any term recited in the claims at the end of this patent is referred to in this patent in a manner consistent with a single meaning, that is done for sake of clarity only so as to not confuse the reader, and it is not intended that such claim term be limited, by implication or otherwise, to that single meaning. Finally, it is not intended that the scope of any claim element be interpreted based on the application of 35 U.S.C. § 112, sixth paragraph.

Fig. 1 illustrates an embodiment of a casino gaming system 10 in accordance with the invention. Referring to Fig. 1, the casino gaming system 10 may include a first group or network 12 of casino gaming units 20 operatively coupled to a network computer 22 via a network data link or bus 24. The casino gaming system 10 may include a second group or network 26 of casino gaming units 30 operatively coupled to a network computer 32 via a network data link or bus 34. The first and second gaming networks 12, 26 may be operatively coupled to each other via a network 40, which may comprise, for example, the Internet, a wide area network (WAN), or a local area network (LAN) via a first network link 42 and a second network link 44.

The first network 12 of gaming units 20 may be provided in a first casino, and the second network 26 of gaming units 30 may be provided in a second casino located in a separate geographic location than the first casino. For example, the two casinos may be located in different areas of the same city, or they may be located in different states. The network 40 may include a plurality of network computers or server computers (not

shown), each of which may be operatively interconnected. Where the network 40 comprises the Internet, data communication may take place over the communication links 42, 44 via an Internet communication protocol.

5 The network computer 22 may be a server computer and may be used to accumulate and analyze data relating to the operation of the gaming units 20. For example, the network computer 22 may continuously receive data from each of the gaming units 20 indicative of the dollar amount and number of wagers being made on each of the gaming units 20, data indicative of how much each of the gaming units 20 is paying out in winnings, data regarding the identity and gaming habits of players playing 10 each of the gaming units 20, etc. The network computer 32 may be a server computer and may be used to perform the same or different functions in relation to the gaming units 30 as the network computer 22 described above.

15 Although each network 12, 26 is shown to include one network computer 22, 32 and four gaming units 20, 30, it should be understood that different numbers of computers and gaming units may be utilized. For example, the network 12 may include a plurality of network computers 22 and tens or hundreds of gaming units 20, all of which may be interconnected via the data link 24. The data link 24 may provided as a dedicated hardwired link or a wireless link. Although the data link 24 is shown as a single data link 24, the data link 24 may comprise multiple data links.

20 Fig. 2 is a perspective view of one possible embodiment of one or more of the gaming units 20. Although the following description addresses the design of the gaming units 20, it should be understood that the gaming units 30 may have the same design as the gaming units 20 described below. It should be understood that the design of one or more of the gaming units 20 may be different than the design of other gaming units 20, and that the design of one or more of the gaming units 30 may be different than the design of other gaming units 30. Each gaming unit 20 may be any type of casino gaming 25 unit and may have various different structures and methods of operation. For exemplary purposes, various designs of the gaming units 20 are described below, but it should be understood that numerous other designs may be utilized.

30 Referring to Fig. 2, the casino gaming unit 20 may include a housing or cabinet 50 and one or more input devices, which may include a coin slot or acceptor 52, a paper



currency acceptor 54, a ticket reader/printer 56 and a card reader 58, which may be used to input value to the gaming unit 20. A value input device may include any device that can accept value from a customer. As used herein, the term “value” may encompass gaming tokens, coins, paper currency, ticket vouchers, credit or debit cards, and any other object representative of value.

If provided on the gaming unit 20, the ticket reader/printer 56 may be used to read and/or print or otherwise encode ticket vouchers 60. The ticket vouchers 60 may be composed of paper or another printable or encodable material and may have one or more of the following informational items printed or encoded thereon: the casino name, the type of ticket voucher, a validation number, a bar code with control and/or security data, the date and time of issuance of the ticket voucher, redemption instructions and restrictions, a description of an award, and any other information that may be necessary or desirable. Different types of ticket vouchers 60 could be used, such as bonus ticket vouchers, cash-redemption ticket vouchers, casino chip ticket vouchers, extra game play ticket vouchers, merchandise ticket vouchers, restaurant ticket vouchers, show ticket vouchers, etc. The ticket vouchers 60 could be printed with an optically readable material such as ink, or data on the ticket vouchers 60 could be magnetically encoded. The ticket reader/printer 56 may be provided with the ability to both read and print ticket vouchers 60, or it may be provided with the ability to only read or only print or encode ticket vouchers 60. In the latter case, for example, some of the gaming units 20 may have ticket printers 56 that may be used to print ticket vouchers 60, which could then be used by a player in other gaming units 20 that have ticket readers 56.

If provided, the card reader 58 may include any type of card reading device, such as a magnetic card reader or an optical card reader, and may be used to read data from a card offered by a player, such as a credit card or a player tracking card. If provided for player tracking purposes, the card reader 58 may be used to read data from, and/or write data to, player tracking cards that are capable of storing data representing the identity of a player, the identity of a casino, the player’s gaming habits, etc.

The gaming unit 20 may include one or more audio speakers 62, a coin payout tray 64, an input control panel 66, and a color video display unit 70 for displaying images relating to the game or games provided by the gaming unit 20. A second display unit may

also be included and may be used for bonus games, additional graphics, information or any other purpose. The audio speakers 62 may generate audio representing sounds such as the noise of spinning slot machine reels, a dealer's voice, music, announcements or any other audio related to a casino game. The input control panel 66 may be provided with a plurality of pushbuttons or touch-sensitive areas that may be pressed by a player to select games, make wagers, make gaming decisions, etc.

Fig. 2A illustrates one possible embodiment of the control panel 66, which may be used where the gaming unit 20 is a slot machine having a plurality of mechanical or "virtual" reels. Referring to Fig. 2A, the control panel 66 may include a "See Pays" button 72 that, when activated, causes the display unit 70 to generate one or more display screens showing the odds or payout information for the game or games provided by the gaming unit 20. As used herein, the term "button" is intended to encompass any device that allows a player to make an input, such as an input device that must be depressed to make an input selection or a display area that a player may simply touch. The control panel 66 may include a "Cash Out" button 74 that may be activated when a player decides to terminate play on the gaming unit 20, in which case the gaming unit 20 may return value to the player, such as by returning a number of coins to the player via the payout tray 64.

If the gaming unit 20 provides a slots game having a plurality of reels and a plurality of paylines which define winning combinations of reel symbols, the control panel 66 may be provided with a plurality of selection buttons 76, each of which allows the player to select a different number of paylines prior to spinning the reels. For example, five buttons 76 may be provided, each of which may allow a player to select one, three, five, seven or nine paylines.

If the gaming unit 20 provides a slots game having a plurality of reels, the control panel 66 may be provided with a plurality of selection buttons 78 each of which allows a player to specify a wager amount for each payline selected. For example, if the smallest wager accepted by the gaming unit 20 is a quarter (\$0.25), the gaming unit 20 may be provided with five selection buttons 78, each of which may allow a player to select one, two, three, four or five quarters to wager for each payline selected. In that case, if a player were to activate the "5" button 76 (meaning that five paylines were to be played

on the next spin of the reels) and then activate the “3” button 78 (meaning that three coins per payline were to be wagered), the total wager would be \$3.75 (assuming the minimum bet was \$0.25).

5 The control panel 66 may include a “Max Bet” button 80 to allow a player to make the maximum wager allowable for a game. In the above example, where up to nine paylines were provided and up to five quarters could be wagered for each payline selected, the maximum wager would be 45 quarters, or \$11.25. The control panel 66 may include a spin button 82 to allow the player to initiate spinning of the reels of a slots game after a wager has been made. The control panel 66 may include one or more  
10 buttons 84 for making an automated selection, with one or more additional buttons, such as selection buttons 76, used for player selection.

In Fig. 2A, a rectangle is shown around the buttons 72, 74, 76, 78, 80, 82, 84. It should be understood that rectangle simply designates, for ease of reference, an area in which the buttons 72, 74, 76, 78, 80, 82, 84 may be located. Consequently, the term  
15 “control panel” should not be construed to imply that a panel or plate separate from the housing 50 of the gaming unit 20 is required, and the term “control panel” may encompass a plurality or grouping of player activatable buttons.

Although one possible control panel 66 is described above, it should be understood that different buttons could be utilized in the control panel 66, and that the particular buttons used may depend on the game or games that could be played on the gaming unit 20. Although the control panel 66 is shown to be separate from the display unit 70, it should be understood that the control panel 66 could be generated by the display unit 70. In that case, each of the buttons of the control panel 66 could be a colored area generated by the display unit 70, and some type of mechanism may be  
20 associated with the display unit 70 to detect when each of the buttons was touched, such as a touch-sensitive screen.  
25

### **Gaming Unit Electronics**

Fig. 3 is a block diagram of a number of components that may be incorporated in the gaming unit 20. Referring to Fig. 3, the gaming unit 20 may include a controller 100 that may comprise a program memory 102, a microcontroller or microprocessor (MP)  
30

104, a random-access memory (RAM) 106 and an input/output (I/O) circuit 108, all of which may be interconnected via an address/data bus 110. It should be appreciated that although only one microprocessor 104 is shown, the controller 100 may include multiple microprocessors 104. Similarly, the memory of the controller 100 may include multiple RAMs 106 and multiple program memories 102. Although the I/O circuit 108 is shown as a single block, it should be appreciated that the I/O circuit 108 may include a number of different types of I/O circuits. The RAM(s) 104 and program memories 102 may be implemented as semiconductor memories, magnetically readable memories, and/or optically readable memories, for example.

Fig. 3 illustrates that the control panel 66, the coin acceptor 52, the bill acceptor 54, the card reader 58 and the ticket reader/printer 56 may be operatively coupled to the I/O circuit 108, each of those components being so coupled by either a unidirectional or bidirectional, single-line or multiple-line data link, which may depend on the design of the component that is used. The speaker(s) 62 may be operatively coupled to a sound circuit 112, that may comprise a voice- and sound-synthesis circuit or that may comprise a driver circuit. The sound-generating circuit 112 may be coupled to the I/O circuit 108.

As shown in Fig. 3, the components 52, 54, 56, 58, 66, 112 may be connected to the I/O circuit 108 via a respective direct line or conductor. Different connection schemes could be used. For example, one or more of the components shown in Fig. 3 may be connected to the I/O circuit 108 via a common bus or other data link that is shared by a number of components. Furthermore, some of the components may be directly connected to the microprocessor 104 without passing through the I/O circuit 108.

Fig. 3 also illustrates that the gaming unit 20 may also include a random generator (RG) circuit 114, which may reside on the network (such as one of network computers 22, 32) and which may be coupled to the I/O circuit 108 via the datalink 24. The random generator 114 may also be embodied in one or more of the memory devices associated with the controller 100. The random generator 114 may be a random number generator. The random generator 114 may include an algorithm that is capable of generating a sequence of numbers or otherwise that appear to be statistically independent and uniformly distributed. Such an algorithm may be, for example, a pseudo-random number generating algorithm. Other random generators may also be employed such as a truly

random number generator or quasi-random number generator. The type of random generator or algorithm may be dependent on the type of selection being made. For example, the presentation of options presented during the main operating routine 200, described below, may require a relatively simple random number generator to make an automated selection. However, for selections presented during any of a number of casino game routines, a more sophisticated random generator may be employed. Furthermore, the gaming unit 20 may include more than one random generator, where each random generator may be used for a different purpose, such as using one random generator for making random choices that are critical to the outcome of the game, with another random generator used for selecting player-selectable options. In addition, a random generator may be assigned to each set of player-selectable options. For example, in the game of video poker, the player concurrently play more than one hand of cards (i.e., more than one set of player-selectable options). A separate random generator may be used for each of the poker hands that the player is selecting cards from. Separate random generators may be used for other situations where the player is presented with multiple sets of player-selectable options, such as a random generator for each player's hand in video blackjack, for each payline selection or slots game in video slots, for each bingo card selection or bingo game in video bingo, etc.

### **Overall Operation of Gaming Unit**

One manner in which one or more of the gaming units 20 (and one or more of the gaming units 30) may operate is described below in connection with a number of flowcharts which represent a number of portions or routines of one or more computer programs, which may be stored in one or more of the memories of the controller 100. The computer program(s) or portions thereof may be stored remotely, outside of the gaming unit 20, and may control the operation of the gaming unit 20 from a remote location. Such remote control may be facilitated with the use of a wireless connection, or by an Internet interface that connects the gaming unit 20 with a remote computer (such as one of the network computers 22, 32) having a memory in which the computer program portions are stored. The computer program portions may be written in any high level language such as C, C+, C++ or the like or any low-level, assembly or machine

language. By storing the computer program portions therein, various portions of the memories 102, 106 are physically and/or structurally configured in accordance with computer program instructions.

Fig. 4 is a flowchart of a main operating routine 200 that may be stored in the memory of the controller 100. Referring to Fig. 4, the main routine 200 may begin operation at block 202 during which an attraction sequence may be performed in an attempt to induce a potential player in a casino to play the gaming unit 20. The attraction sequence may be performed by displaying one or more video images on the display unit 70 and/or causing one or more sound segments, such as voice or music, to be generated via the speakers 62. The attraction sequence may include a scrolling list of games that may be played on the gaming unit 20 and/or video images of various games being played, such as video poker, video blackjack, video slots, video keno, video bingo, etc.

During performance of the attraction sequence, if a potential player makes any input to the gaming unit 20 as determined at block 204, the attraction sequence may be terminated and a game-selection display may be generated on the display unit 70 at block 206 to allow the player to select a game available on the gaming unit 20. The gaming unit 20 may detect an input at block 204 in various ways. For example, the gaming unit 20 could detect if the player presses any button on the gaming unit 20; the gaming unit 20 could determine if the player deposited one or more coins into the gaming unit 20; the gaming unit 20 could determine if player deposited paper currency into the gaming unit; etc.

The game-selection display generated at block 206 may include, for example, a list of games that may be played on the gaming unit 20 and/or a visual message to prompt the player to deposit value into the gaming unit 20. While the game-selection display is generated, the gaming unit 20 may wait for the player to make a game selection. Alternatively, the game selection display may prompt the person to chose between making a game selection or allowing the controller 100 to make a random selection from among the games presented.

As mentioned above, the gaming unit 20 may also have a dedicated Autoselect button 84 for allowing the controller 100 to make an automatic selection based on the options that are presented to the player. This dedicated Autoselect button 84 may then

be available to the player throughout the entire session of play at the gaming unit 20. Thus, each time the player is presented with multiple options the player does not need to be prompted each and every time to choose between making a selection or having the controller 100 make an automated random selection. Upon selection of one of the games by the player or the controller 100 as determined at block 208, the controller 100 may cause one of a number of game routines to be performed to allow the selected game to be played. For example, the game routines could include a video poker routine 210, a video blackjack routine 220, a slots routine 230, a video keno routine 240, and a video bingo routine 250. At block 208, if no game selection is made within a given period of time, either by the player or the controller 100, the operation may branch back to block 202 (not shown) or otherwise remain in a waiting state for a game selection.

After one of the routines 210, 220, 230, 240, 250 has been performed to allow the player to play one of the games, block 260 may be utilized to determine whether the player wishes to terminate play on the gaming unit 20 or to select another game. If the player wishes to stop playing the gaming unit 20, which wish may be expressed, for example, by selecting a "Cash Out" button, the controller 100 may dispense value to the player at block 262 based on the outcome of the game(s) played by the player. The operation may then return to block 202. If the player did not wish to quit as determined at block 260, the routine may return to block 208 where the game-selection display may again be generated to allow the player to select another game.

It should be noted that although five gaming routines are shown in Fig. 4, a different number of routines could be included to allow play of a different number of games. The gaming unit 20 may also be programmed to allow play of different games.

Fig. 5 is a flowchart of an alternative main operating routine 300 that may be stored in the memory of the controller 100. The main routine 300 may be utilized for gaming units 20 that are designed to allow play of only a single game or single type of game. Referring to Fig. 5, the main routine 300 may begin operation at block 302 during which an attraction sequence may be performed in an attempt to induce a potential player in a casino to play the gaming unit 20. The attraction sequence may be performed by displaying one or more video images on the display unit 70 and/or causing one or more sound segments, such as voice or music, to be generated via the speakers 62.

During performance of the attraction sequence, if a potential player makes any input to the gaming unit 20 as determined at block 304, the attraction sequence may be terminated and a game display may be generated on the display unit 70 at block 306. The game display generated at block 306 may include, for example, an image of the casino game that may be played on the gaming unit 20 and/or a visual message to prompt the player to deposit value into the gaming unit 20. At block 308, the gaming unit 20 may determine if the player requested information concerning the game, in which case the requested information may be displayed at block 310. Block 312 may be used to determine if the player requested initiation of a game, in which case a game routine 320 may be performed. The game routine 320 could be any one of the game routines disclosed herein, such as one of the five game routines 210, 220, 230, 240, 250, or another game routine.

After the routine 320 has been performed to allow the player to play the game, block 322 may be utilized to determine whether the player wishes to terminate play on the gaming unit 20. If the player wishes to stop playing the gaming unit 20, which wish may be expressed, for example, by selecting a "Cash Out" button, the controller 100 may dispense value to the player at block 324 based on the outcome of the game(s) played by the player. The operation may then return to block 302. If the player did not wish to quit as determined at block 322, the program may branch back to block 308.

### Video Poker

Fig. 6 is an exemplary display 350 that may be shown on the display unit 70 during performance of the video poker routine 210 shown schematically in Fig. 4. Referring to Fig. 6, the display 350 may include video images 352 of a plurality of playing cards representing the player's hand, such as five cards. To allow the player to control the play of the video poker game, a plurality of player-selectable buttons may be displayed. The buttons may include a "Hold" button 354 disposed directly below each of the playing card images 352, a "Cash Out" button 356, a "See Pays" button 358, a "Bet One Credit" button 360, a "Bet Max Credits" button 362, and a "Deal/Draw" button 364. Alternatively or in combination with the Hold button 354, an Autoselect button graphic 368 may be displayed as an option that may be actuated by the player to allow the



controller 100 to select which cards to hold and which cards to discard. The display 350 may also include an area 366 in which the number of remaining credits or value is displayed. If the display unit 70 is provided with a touch-sensitive screen, the buttons 354, 356, 358, 360, 362, 364, 368 may form part of the video display 350. Alternatively, one or more of those buttons may be provided as part of a control panel that is provided separately from the display unit 70.

Fig. 8 is a flowchart of the video poker routine 210 shown schematically in Fig. 4. Referring to Fig. 8, at block 370, the routine may determine whether the player has requested payout information, such as by activating the "See Pays" button 358, in which case at block 372 the routine may cause one or more pay tables to be displayed on the display unit 70. At block 374, the routine may determine whether the player has made a bet, such as by pressing the "Bet One Credit" button 360, in which case at block 376 bet data corresponding to the bet made by the player may be stored in the memory of the controller 100. At block 378, the routine may determine whether the player has pressed the "Bet Max Credits" button 362, in which case at block 380 bet data corresponding to the maximum allowable bet may be stored in the memory of the controller 100.

At block 382, the routine may determine if the player desires a new hand to be dealt, which may be determined by detecting if the "Deal/Draw" button 364 was activated after a wager was made. In that case, at block 384 a video poker hand may be "dealt" by causing the display unit 70 to generate the playing card images 352. After the hand is dealt, at block 386 the player may be allowed to discard and draw new cards in an attempt to improve the players poker hand. Normally, the player is the one who makes a decision or choice from among the selectable options presented to the player, such as choosing which cards to hold and which to discard in the case of video poker. However, the player may also allow the controller 100 to automatically and randomly choose from among the player selectable options.

The automatic selection of which cards to discard does not need to be purely random among all the cards presented, or even have the appearance of being purely random. Instead, it may be desirable that the controller 100 make an educated choice as to which cards may be held and which may be discarded in accordance with the parameters of the poker game. That is, the selection of a user-selectable option by the

controller 100 may be in accordance not only with the rules of the particular game being played, but also in accordance with strategy decisions that a player would make. For example, if the player is presented with the option of discarding and drawing one card in an attempt to obtain a “straight,” and discarding and drawing another card in an attempt to obtain a “flush,” the player may prefer that the controller 100 make the decision as to whether to go for the straight or to attempt the flush. The controller 100 may be able to calculate that the player’s hand may be a straight or a flush depending on which one of the two cards are chosen. The controller 100 may then only choose between the two cards rather than choosing among all the cards presented. In effect, the controller 100 chooses between attempting to get a straight or a flush. To make a purely random choice among all the cards presented may ruin the player’s chance of getting either the straight or the flush. This example is shown in greater detail with respect to Fig. 6 in which the player is presented with the option of discarding the ace of hearts in attempt to obtain a diamond flush, or discarding the two of diamonds in an attempt to obtain a straight.

In addition to letting the controller 100 make the selection of cards, the player may be given an opportunity to review the selection by the controller 100 and make any changes of which cards to hold and which to discard. If the player accepts the controller’s selection, the player may actuate a button (not shown) to continue the game. Alternatively, the player may chose other cards to hold or have the controller 100 make another selection before continuing with the game.

Referring to Fig. 8, the player may make the selection by actuating the appropriate Hold buttons 354 or actuating the Autoselect button 368 and allowing the controller 100 to make the decision. Also at block 386, the routine may determine if any of the Hold buttons 354 have been activated by the player, or selected by the controller 100, in which case data regarding which of the playing card images 352 are to be “held” may be stored in the controller 100 at block 388. If the “Deal/Draw” button 364 is activated again as determined at block 390, each of the playing card images 352 that was not “held” may be caused to disappear from the video display 350 and to be replaced by a new, randomly selected playing card image 352 at block 392.

At block 394, the routine may determine whether the poker hand represented by the playing card images 352 currently displayed is a winner. That determination may be

made by comparing data representing the currently displayed poker hand with data representing all possible winning hands, which may be stored in the memory of the controller 100. If there is a winning hand, a payout value corresponding to the winning hand may be determined at block 396. At block 398, the player's cumulative value or number of credits may be updated by subtracting the bet made by the player and adding, if the hand was a winner, the payout value determined at block 396. The cumulative value or number of credits may also be displayed in the display area 366 (Fig. 6).

Although the video poker routine 210 is described above in connection with a single poker hand of five cards, the routine 210 may be modified to allow other versions of poker to be played. For example, seven card poker may be played, or stud poker may be played. Alternatively, multiple poker hands may be simultaneously played. In that case, the game may begin by dealing a single poker hand, and the player may be allowed to hold certain cards. After deciding which cards to hold, the held cards may be duplicated in a plurality of different poker hands, with the remaining cards for each of those poker hands being randomly determined.

### Video Blackjack

Fig. 7 is an exemplary display 400 that may be shown on the display unit 70 during performance of the video blackjack routine 220 shown schematically in Fig. 4. Referring to Fig. 7, the display 400 may include video images 402 of a pair of playing cards representing a dealer's hand, with one of the cards shown face up and the other card being shown face down, and video images 404 of a pair of playing cards representing a player's hand, with both the cards shown face up. The "dealer" may be the gaming unit 20.

To allow the player to control the play of the video blackjack game, a plurality of player-selectable buttons may be displayed. The buttons may include a "Cash Out" button 406, a "See Pays" button 408, a "Stay" button 410, a "Hit" button 412, a "Bet One Credit" button 414, and a "Bet Max Credits" button 416. In addition, one or more button graphics for "Autoselect" 420 may be provided for the player to allow the controller 100 to make automatic selections as described below. The display 400 may also include an area 418 in which the number of remaining credits or value is displayed. If the display

unit 70 is provided with a touch-sensitive screen, the buttons 406, 408, 410, 412, 414, 416, 420 may form part of the video display 400. Alternatively, one or more of those buttons may be provided as part of a control panel that is provided separately from the display unit 70.

5 Fig. 9 is a flowchart of the video blackjack routine 220 shown schematically in Fig. 4. Referring to Fig. 9, the video blackjack routine 220 may begin at block 420 where it may determine whether a bet has been made by the player. That may be determined, for example, by detecting the activation of either the "Bet One Credit" button 414 or the "Bet Max Credits" button 416. At block 422, bet data corresponding to the bet made at  
10 block 420 may be stored in the memory of the controller 100. At block 424, a dealer's hand and a player's hand may be "dealt" by making the playing card images 402, 404 appear on the display unit 70.

At block 426, the player may be allowed to be "hit," in which case at block 428 another card will be dealt to the player's hand by making another playing card image 404 appear in the display 400. The player may also be presented with the option of allowing  
15 the controller 100 to make the decision to hit or stay. The user-selectable option to hit or to stay may be dependent on the cards that have already been dealt at block 424 and/or 428, or upon previously being hit. Therefore, the decision by the controller 100 may be an educated decision that takes into account various factors which may include the rules  
20 for blackjack, common or advanced strategy decisions in blackjack or any other parameters of the game. For example, if the player has a count of 18 and is presented with the option to hit or stay, the more probable choice is to stay because there is a greater likelihood that the player will "bust" (i.e. exceed 21) if the player is hit again. The controller 100 may take this into account when making the decision to hit or stay. If the  
25 player is hit, block 430 may determine if the player has bust, or exceeded 21. If the player has not bust, blocks 426 and 428 may be performed again to allow the player to be hit again. During the game the player may also be presented with the option to "double down" or "split." Again the choice may be made by the player or by the controller 100, which may be a purely random decision or an educated decision.

30 As with the video poker game described above, the player may be given an opportunity to review the selection by the controller 100 and change the controller's

decision. If the player accepts the controller's selection, the player may allow the game to continue. Alternatively, the player have the controller 100 make another selection before continuing with the game or the player may make the selection in place of the controller 100.

5 If the player decides not to hit, at block 432 the routine may determine whether the dealer should be hit. Whether the dealer hits may be determined in accordance with predetermined rules, such as the dealer always hits if the dealer's hand totals 15 or less. If the dealer hits, at block 434 the dealer's hand may be dealt another card by making another playing card image 402 appear in the display 400. At block 436 the routine may  
10 determine whether the dealer has bust. If the dealer has not bust, blocks 432, 434 may be performed again to allow the dealer to be hit again.

If the dealer does not hit, at block 438 the outcome of the blackjack game and a corresponding payout may be determined based on, for example, whether the player or the dealer has the higher hand that does not exceed 21. If the player has a winning hand,  
15 a payout value corresponding to the winning hand may be determined at block 440. At block 442, the player's cumulative value or number of credits may be updated by subtracting the bet made by the player and adding, if the player won, the payout value determined at block 396. The cumulative value or number of credits may also be displayed in the display area 418 (Fig. 7).

### Slots

Fig. 10 is an exemplary display 450 that may be shown on the display unit 70 during performance of the slots routine 230 shown schematically in Fig. 4. Referring to Fig. 10, the display 450 may include video images 452 of a plurality of slot machine  
25 reels, each of the reels having a plurality of reel symbols 454 associated therewith. Although the display 450 shows five reel images 452, each of which may have three reel symbols 454 that are visible at a time, other reel configurations could be utilized.

To allow the player to control the play of the slots game, a plurality of player-selectable buttons may be displayed. The buttons may include a "Cash Out" button 456,  
30 a "See Pays" button 458, a plurality of payline-selection buttons 460 each of which allows the player to select a different number of paylines prior to "spinning" the reels, a

plurality of bet-selection buttons 462 each of which allows a player to specify a wager amount for each payline selected, a "Spin" button 464, and a "Max Bet" button 466 to allow a player to make the maximum wager allowable. The buttons may also include an "Autoselect" button 468 for making controller-selections of paylines prior to spinning the reels.

Fig. 11 is a flowchart of the slots routine 230 shown schematically in Fig. 10. Referring to Fig. 11, at block 470, the routine may determine whether the player has requested payout information, such as by activating the "See Pays" button 458, in which case at block 472 the routine may cause one or more pay tables to be displayed on the display unit 70. At block 474, the routine may determine whether the player has pressed one of the payline-selection buttons 460, in which case at block 476 data corresponding to the number of paylines selected by the player may be stored in the memory of the controller 100. Also at block 474, the routine may be determined whether the player has pressed the Autoselect button 468 causing the controller 100 to make the payline selection for the player. The player may be given the opportunity to review the controller 100 selection prior to continuing the game, along with the opportunity to make changes to the automatic selection either manually or by having the controller 100 make another selection. At block 478, the routine may determine whether the player has pressed one of the bet-selection buttons 462, in which case at block 480 data corresponding to the amount bet per payline may be stored in the memory of the controller 100. At block 482, the routine may determine whether the player has pressed the "Max Bet" button 466, in which case at block 484 bet data (which may include both payline data and bet-per-payline data) corresponding to the maximum allowable bet may be stored in the memory of the controller 100.

If the "Spin" button 464 has been activated by the player as determined at block 486, at block 488 the routine may cause the slot machine reel images 452 to begin "spinning" so as to simulate the appearance of a plurality of spinning mechanical slot machine reels. At block 490, the routine may determine the positions at which the slot machine reel images will stop, or the particular symbol images 454 that will be displayed when the reel images 452 stop spinning. At block 492, the routine may stop the reel images 452 from spinning by displaying stationary reel images 452 and images of three

symbols 454 for each stopped reel image 452. The virtual reels may be stopped from left to right, from the perspective of the player, or in any other manner or sequence.

The routine may provide for the possibility of a bonus game or round if certain conditions are met, such as the display in the stopped reel images 452 of a particular symbol 454. If there is such a bonus condition as determined at block 494, the routine may proceed to block 496 where a bonus round may be played. The bonus round may be a different game than slots, and many other types of bonus games could be provided. An example of a bonus game that may be used is described below with respect to Figs. 14-17. If the player wins the bonus round, or receives additional credits or points in the bonus round, a bonus value may be determined at block 498. A payout value corresponding to outcome of the slots game and/or the bonus round may be determined at block 500. At block 502, the player's cumulative value or number of credits may be updated by subtracting the bet made by the player and adding, if the slot game and/or bonus round was a winner, the payout value determined at block 500.

Although the above routine has been described as a virtual slot machine routine in which slot machine reels are represented as images on the display unit 70, actual slot machine reels that are capable of being spun may be utilized instead.

### Video Bingo

Fig. 12 is an exemplary display 600 that may be shown on the display unit 70 during performance of the video bingo routine 250 shown schematically in Fig. 4. Referring to Fig. 12, the display 600 may include one or more video images 602 of a bingo card and images of the bingo numbers selected during the game. The bingo card images 602 may have a grid pattern.

To allow the player to control the play of the bingo game, a plurality of player-selectable buttons may be displayed. The buttons may include a "Cash Out" button 604, a "See Pays" button 606, a "Bet One Credit" button 608, a "Bet Max Credits" button 610, a "Select Card" button 612, and a "Play" button 614. To allow the controller 100 to select one or more of the bingo cards, an "Autoselect" graphic 618 may be provided to give the player the option of allowing the controller 100 to make the selection. The display 600 may also include an area 616 in which the number of remaining credits or

value is displayed. If the display unit 70 is provided with a touch-sensitive screen, the buttons may form part of the video display 600. Alternatively, one or more of those buttons may be provided as part of a control panel that is provided separately from the display unit 70.

Fig. 13 is a flowchart of the video bingo routine 250 shown schematically in Fig.

4. The bingo routine 250 may be utilized in connection with a single gaming unit 20 where a single player is playing a bingo game, or the bingo routine 250 may be utilized in connection with multiple gaming units 20 where multiple players are playing a single bingo game. In the latter case, one or more of the acts described below may be performed either by the controller 100 in each gaming unit 20 or by one of the network computers 22, 32 to which multiple gaming units 20 are operatively connected.

Referring to Fig. 13, at block 620, the routine may determine whether the player has requested payout information, such as by activating the "See Pays" button 606, in which case at block 622 the routine may cause one or more pay tables to be displayed on the display unit 70. At block 624, the routine may determine whether the player has made a bet, such as by having pressed the "Bet One Credit" button 608 or the "Bet Max Credits" button 610, in which case at block 626 bet data corresponding to the bet made by the player may be stored in the memory of the controller 100.

After the player has made a wager, at block 628 the player may select a bingo card, which may be generated randomly. The player may select more than one bingo card, and there may be a maximum number of bingo cards that a player may select. The selection of one or more bingo cards may also be done randomly by the controller 100 if the player decides to use this option. After a selection by the controller 100, the player may modify the controller 100 selection or have the controller 100 make another bingo card selection. After play is to commence, as determined at block 632, at block 634 a bingo number may be randomly generated by the controller 100 or a central computer such as one of the network computers 22, 32. At block 636, the bingo number may be displayed on the display unit 70 and the display units 70 of any other gaming units 20 involved in the bingo game.

At block 638, the controller 100 (or a central computer) may determine whether any player has won the bingo game. If no player has won, another bingo number may be



randomly selected at block 634. If any player has bingo as determined at block 638, the routine may determine at block 640 whether the player playing that gaming unit 20 was the winner. If so, at block 642 a payout for the player may be determined. The payout may depend on the number of random numbers that were drawn before there was a winner, the total number of winners (if there was more than one player), and the amount of money that was wagered on the game. At block 644, the player's cumulative value or number of credits may be updated by subtracting the bet made by the player and adding, if the bingo game was won, the payout value determined at block 642. The cumulative value or number of credits may also be displayed in the display area 616 (Fig. 12).

### Bonus Game

Figs. 15-17 illustrate an exemplary display 700 that may be shown on the display unit 70 during performance of a bonus game routine that may be played, such as the bonus game 496 for the slots routine 230. Referring to Fig. 15, the display 700 may include a video image 702 of a plurality of items that may be selected during the bonus game. The type of player-selectable items or options that may be displayed may be dependent on the type of bonus game being played. For example, the bonus game 496 in the slots routine 230 may be a free round of video slots, in which case the player-selectable items may be the paylines that may be selected. If the bonus game is a free game of video poker, the player-selectable options may be cards that may be discarded. For a free round of video blackjack, the decision to hit or stay may be the player-selectable option. With a free round of video bingo, the choice of bingo cards may be the player-selectable options that are displayed as a video image 702.

While the bonus game examples described above are with respect to bonus rounds of the game being played, the bonus game may also be different from the game being played. In the above description of the video slots routine 230, it has been noted that the bonus game 496 may be played if a particular symbol 454 of the stopped reel images 452 is displayed. A bonus game may then be displayed on the same display unit 70 or a second display unit in which the player is required to choose one or more items from among several items represented as video images 702. Each item or option may have a value associated with it. The value associated with the selected item(s) may be added to

the player's total point value. For example, the player may be required to select two out of four options presented as part of the bonus game routine. The selections may be done by the player and/or the controller 100. To allow the player to control the play of the bonus game, a plurality of user-selectable button graphics may be displayed, such as a "Select/Item" graphic 704 corresponding to each item that may be selected, and an "Autoselect" graphic 706.

Referring to Fig. 16, the display 700 may include a video image 702 of a plurality of other items to be selected, of which Item 2 has been selected by the player. The player may select Item 2 by actuating the button graphic 704 corresponding to the video image 702 of Item 2. The player may then be precluded from selecting Item 2 again. Items 1, 3 and 4 of video image 702 may then remain to be selected by the player and/or the controller 100. Referring to Fig. 17, the display 700 may include video images 702 of a plurality of player-selectable items, of which Item 2 has previously been selected by the player and Item 4 has been randomly selected by the controller 100 from a choice of Items 1, 3 and 4. The random selection of Item 4 may be done in response to the player selecting the Autoselect button graphic 706 which actuates the random generator 114 as shown in Fig. 3. Once the selections are complete, the point values may be revealed and added to the players overall point total. Alternatively, only one or a few of the selectable options may have a point value associated with them, in which case the player may not have any points to add to the overall point total, or which may actually decrease the player's point total and resulting payout.

Fig. 14 is a flow chart of a bonus game feature that may be implemented independent of, or in combination with, any of the casino game routines 210, 220, 230, 240, 250, 600 described above. For example, the bonus game feature may be implemented with the slots routine 230 as described above. Referring to Fig. 14, the bonus game routine 496 may begin at block 802. The bonus game routine 496 may become available to the player in response to any of a number of occurrences. Such occurrences may include winning a certain number of games, appearance of a particular icon or graphic, reaching a particular score, by random occurrence, or any of a number of other ways. The bonus game routine 496 may generate and present the player with several options to choose from at block 802. Upon being presented with the selections

at block 802, the player may be presented with the option of choosing to select the items representing the options or choosing to allow the controller 100 (or a central computer) to select the options at block 804. A determination may then be made at block 804 as to whether the player has selected the automatic selection or has decided to select the items without the aid of the controller 100. If the player decides not to enlist the help of the controller 100, the player may be prompted to make a selection at block 806. If the player does not make any selection after a certain amount of time, the bonus game routine may return to block 804 and prompt the player again to choose between making a selection or having the controller 100 make the selection. If the player makes the selection as determined at block 806, the bonus game routine 496 may increment the selection count by one. As with the above described games, the player may be given an opportunity to review the selection by the controller 100 and make any changes to the selection. The player may either make another selection or have the controller 100 make another selection before continuing with the bonus game.

If the player decides to use the controller 100 to make a selection, as determined at block 804, the bonus game 496 may then randomly generate a selection from the available options at block 810. As with other games, each set of options may be associated with a separate random generator. Once the selection has been randomly generated at block 810, the selection count may be incremented by one at block 808. After an option has been selected, either by the player or the controller 100 and the selection count has been incremented accordingly, the selected option and the number of items are updated at block 812. The bonus game routine 496 may then determine if an appropriate number of selections has been made. If not, the routine returns to block 804 to run through the selection process again. If enough selections have been made, as determined at block 814, the bonus game routine 496 may determine at block 816 whether the player is a winner by having selected the right option. If so, at block 818 a payout for the player may be determined. Alternatively, the routine 496 may simply determine at block 816 how much value was associated with a particular selection and determine the payout at block 818. The payout may comprise additional credits or points to be included with any points accumulated with the casino game routine. Once the bonus value has been determined, the bonus game routine 496 may then end and continue

on with any of the other casino game routines 210, 220, 230, 240, 250 as shown at block 820, or may discontinue play entirely.

### **Automated Selection**

5 Fig. 18 is a flow chart of a general automatic selection routine 900 that may be utilized with any aspect of any of the casino game routines 210, 220, 230, 240, 250, 496 described above in which the players are presented with multiple player-selectable items or options. Referring Fig. 18, the routine 900 may begin at block 902 at which a player is presented with multiple player-selectable options. At block 904 the player may be presented with the choice of allowing the controller 100 to make a selection or make a selection without the aid of the controller 100. If the player decides to make a selection without the aid of the controller 100, the routine 900 registers the player selection of one or more of the player-selectable options at block 906. If the player decides to utilize the automated selection, at block 908 of the routine 900 the controller 100 may make a random selection of one or more of the player-selectable options presented at block 902. After a selection has been made, either through player selection at block 906 or controller selection at block 908, the routine 900 may store the selections at block 910. The routine 900 may then determine whether the correct number of selections have been made or the selection process has been otherwise completed at block 912. If so, the casino game routine may continue at block 916. If not, the remaining player selectable options may be updated at block 914 with the selected option no longer being available. The player may then be presented with the remaining player selectable options at block 902 and the routine may continue until all selections have been complete.